

What is claimed is:

1. A removable vascular filter system comprising:

an elongate wire having distal and proximal ends;

5 a filter membrane having a distal portion and a proximal free end portion, wherein

said distal portion is pivotably attached to the elongate wire near said distal end of the
elongate wire and wherein the proximal free end portion is substantially parallel to the
elongate wire in its collapsed state and wherein said free end portion has a generally
scalloped shape; and

10 deploying means for causing the filter to assume a position substantially normal to
the longitudinal axis of the elongate wire;

2. The vascular filter system of claim 1, whereby the deploying means
comprises a control mechanism operable from the proximal end of the elongate wire and
15 operatively connected to the filter membrane.

3. The vascular filter system of claim 1, wherein the filter membrane is
comprised of a porous mesh, and the scalloped shape is comprised of rounded sections.

20 4. The vascular system of claim 3, wherein the pore size of the porous mesh
is about 50-300 microns.

5. The vascular system of claim 3, wherein the pore size of the porous mesh is about 20-500 microns.

6. A method for protecting a patient during an endoluminal procedure,
5 comprising the steps of:

providing a filter comprising an elongate wire having distal and proximal ends,
and a filter membrane having a distal portion and a proximal free end portion, wherein
said distal portion is pivotably attached to the elongate wire near said distal end of the
elongate wire and wherein the proximal free end portion is substantially parallel to the
10 elongate wire in its collapsed state and wherein said free end portion has a generally
scalloped shape;

advancing the filter to a region of interest within a vessel;

expanding the filter membrane within the region of interest; and

performing an endoluminal procedure at the region of interest, wherein released
15 embolic material is captured by the filter.

7. The method of claim 6, wherein the filter membrane is expanded
downstream of the region of interest.

20 8. The method of claim 6, wherein the filter further comprises a deploying
means to hold the filter membrane in a collapsed condition.

9. The method of claim 8, wherein the deploying means is a sleeve.

10. The method of claim 9, wherein the step of expanding the filter further comprises the step of proximally displacing the sleeve from the filter.

5 11. The method of claim 6, wherein the vessel is a carotid artery.

12. The method of claim 6, wherein the vessel is a coronary artery.

10 13. The method of claim 6, wherein the step of performing an endoluminal procedure comprises the step of performing angioplasty.

14. The method of claim 6, wherein the step of performing an endoluminal procedure comprises the step of placing a stent within the region of interest.